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EXAMINER	
SWEARINGEN, JEFFREY R	
ART UNIT	**PAPER NUMBER**
2445	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	09/714,724	BARILLOUD ET AL.	
	Examiner	Art Unit	
	Jeffrey R. Swearingen	2445	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 August 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *3-12 and 37-41* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *3-12 and 37-41* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 8/26/2009 have been fully considered but they are not persuasive.

2. Applicant argues that Derby's LAN access agent is not equivalent to the claimed *local service manager* since the Derby LAN access agent does not have a client uniquely associated with it, therefore failing to teach *wherein each client is uniquely associated with a local service manager.* Applicant's claim language is *wherein each client is uniquely associated with a local service manager.* (emphasis added). The local service manager need not be uniquely associated with the client; the client must be uniquely associated with the local service manager. It is commonly known to one of ordinary skill in the art that while a client must be singularly associated with a server that is an access point for a network, the server may function as an access point for multiple clients to the network. Applicant's claim language does not require the local service manager to only associate with a single client.

3. Applicant argues that Derby failed to disclose the claimed service manager fails to have *information about and provide access to networked services defined within a respective local region* of the distributed data processing system. The directory services unit distributes information about and provides access to networked services. "Directory services unit 22 relies on the registration of the necessary addressing information by the local LAN access agents in the form of suitable address prefixes as employed by the external protocols executed on the LAN, thus indicating reachability of

stations identified by network layer addresses derived from such prefixes." The "suitable address prefixes as employed by the external protocols" indicate which stations, or *networked services defined within a respective local region*, are accessible. Because the directory services unit receives necessary addressing information from the local LAN access agent, the local LAN access agent must possess *information about networked services.* The LAN access agent works through the directory services unit to *provide access to networked services.*

4. Applicant argues that Derby failed to disclose *network service demand balancing.* In response to applicant's arguments, the recitation *balancing demand for networked services* has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951). No method step in the claim gives any indication of balancing services, and the claim only functions as a lookup command when a local server fails to possess specific information requested.

5. Applicant argues that Elnozahy failed to teach both a local service manager and a distributed service manager, where each distributed service manager provides access to networked services to the local service manager(s). Applicant misunderstands the rejection. The Cell Directory Service provides the information about the networked

services to the local service managers. The CDS Server distributes the information for the networked services to the local service managers. Therefore, the CDS server functions as the distributed service manager, and the Cell Directory Service provides the information to agents. Additionally, Elnozahy provides for a Master CDS and a Replica CDS machine, which can be respectively treated as the local service manager and the distributed service manager (effectively a mirror).

6. Applicant argues that Elnozahy failed to disclose *receiving, at a distributed service manager, a request for a networked service from a local service manager for which the local service manager lacks information.* When one CDS server does not possess information about a networked service, it contacts another CDS server to query for the information.

7. Applicant argues that Elnozahy failed to disclose *sending a request for a networked service from a requesting client to a local service manager associated with the requesting client; and returning information for referencing a matching networked service from the local service manager to the requesting client, wherein the matching networked service has characteristics that match parameters in the request for a networked service.* When one CDS server does not possess information about a networked service, it contacts another CDS server to query for the information. Client requests are specifically taught in column 6, lines 20-37.

8. Applicant argues that Elnozahy failed to disclose *responsive to a determination that the distributed service manager does not have information about one or more matching networked services, broadcasting the request for a networked service from*

the distributed service manager to all distributed service managers in the distributed data processing system. Column 7, lines 8-9 discloses a broadcast of information from a single agent to all other agents on the local network to persistently update all caches when information changes based on lookup and update requests.

9. Applicant argues that Elnozahy failed to disclose *determining, based on the request whether to return a single matched network service of the set of matched network services or the set of matched network services.* If all elements of the CDS server are not present (failure), then the entire set of matched service may be updated in the next cache coherence cycle. If only one element is missing during a cache coherence cycle, only that one element will be updated.

10. Applicant argues that Jindal failed to disclose *in response to a determination that the distributed service manager has information about two or more matching networked services, selecting a single networked service at the distributed service manager.* Jindal teaches that if a service is replicated (two or more matching networked services), then one may be selected based on load balancing techniques. Elnozahy taught the distributed service manager can have information on two or more matching networked services based on the information of the CDS Servers.

11. Applicant argues that Jindal failed to disclose *performing a load balancing operation at the distributed service manager to select the single networked service.* Jindal teaches that if a service is replicated (two or more matching networked services), then one may be selected based on load balancing techniques. Elnozahy taught the

distributed service manager can have information on two or more matching networked services based on the information of the CDS Servers.

12. Applicant argues that Jindal failed to disclose *comparing one or more of network-related metrics associated with a network path between a requesting client and a providing server.* Jindal teaches many network related metrics associated with a network path between a requesting client and a providing server, such as the response time for a request (indicating latency on a path) and a server's proximity or hop distance (indicating latency and distance on a path).

13. Applicant argues that Jindal failed to disclose *wherein each of the distributed service managers includes a localization module, wherein the parameters within respective localization modules are tailored to provide different load balancing for corresponding distributed service managers.* Each server in Jindal is selected based on proximity to those clients the server serves. Load balancing is specific to the server.

14. Applicant argues that Fowlow failed to disclose *configuring the local service manager to not provide access to object request broker (ORB) services that provide internal service and which are valid only in a scope of a local ORB; configuring the local service manager to provide access to ORB services that are instantiated on each ORB only through requests based on an ORB identifier; and configuring the local service manager to provide access to ORB services that may be accessed from outside the scope of the local ORB through requests based on both a service specification string and an ORB identifier.* Fowlow modifies the Elnozahy-Chandra combination to support CORBA, or use of ORB service. The elements of claim 37 in question are limited to the

modifications necessary to allow the Elnozahy-Chandra combination to utilize CORBA in order to function. ORB identifiers must be present in a CORBA system, and a CORBA system utilizes ORB services. Beyond this, it is unclear what Applicant's exact argument is concerning claim 37.

Claim Rejections - 35 USC § 102

15. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

16. Claim 3 is rejected under 35 U.S.C. 102(b) as being anticipated by Derby et al. (US 5,426,637).

17. Derby's assignee is International Business Machines Corporation, which is the assignee of the instant application. Derby was issued in 1995, and pre-dates the filing of the instant application by more than five years.

18. In regard to claim 3, Derby disclosed *a method of balancing demand for networked services in a distributed data processing system, the method comprising the steps of:*

initializing one or more local service managers within the distributed data processing system, wherein each local service manager has information about and provides access to networked services defined within a respective local region of the distributed data processing system for clients within the distributed data processing

system, and wherein each client is uniquely associated with a local service manager; LAN access agent in column 6, line 10

initializing one or more distributed service managers within the distributed data processing system, wherein each distributed service manager provides access to networked services to local service managers within the distributed data processing system, and wherein each local service manager is uniquely associated with a distributed service manager; directory services unit in column 6, lines 18-32

receiving, at a distributed service manager, a request for a networked service from a local service manager for which the local service manager lacks information; a LAN search procedure described in column 7, lines 24-40

determining whether the distributed service manager has information about a networked service with one or more characteristics that match one or more parameters in the request for a networked service, wherein the determining step is accomplished by reference to a cache maintained by the distributed service manager which contains information resulting from prior requests for networked services; and a LAN search procedure described in column 7, lines 24-40

returning information for referencing a matched networked service. a LAN search procedure described in column 7, lines 24-40

Claim Rejections - 35 USC § 103

19. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

20. Claims 3-7, and 38-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Elnozahy et al. (US 6,014,686) in view of Chandra et al. (US 6,457,047).

21. In regard to claim 3, Elnozahy disclosed *a method of balancing demand for networked services in a distributed data processing system, the method comprising the steps of:*

initializing one or more local service managers within the distributed data processing system, wherein each local service manager has information about and provides access to networked services defined within a respective local region of the distributed data processing system for clients within the distributed data processing system, and wherein each client is uniquely associated with a local service manager; Cell Directory Service, Elnozahy, column 1, lines 41-59; initializes and runs in column 5, lines 20-37

initializing one or more distributed service managers within the distributed data processing system, wherein each distributed service manager provides access to networked services to local service managers within the distributed data processing system, and wherein each local service manager is uniquely associated with a distributed service manager; CDS server, column 5, lines 20-37

Elnozahy disclosed a lookup system for distributed directory service information in an network. Elnozahy failed to disclose the ability of said lookup system to cache information.

Chandra disclosed a method of distributed application caching. If the item queried if found, the result is returned to the user and cached locally. Chandra, column 6, lines 20-34. If the information is not found locally, the query will be executed on distributed directories until the information is found. Chandra, column 6, lines 35-61.

It would have been obvious to one of ordinary skill in the art at the time of invention to implement distributed caching with the Elnozahy distributed service directory system in order to reduce latency in responding to queries.

22. In regard to claim 4, Elnozahy in view of Chandra disclosed:

sending a request for a networked service from a requesting client to a local service manager associated with the requesting client; and Chandra, column 6, lines 20-34

returning information for referencing a matching networked service from the local service manager to the requesting client, wherein the matching networked service has characteristics that match parameters in the request for a networked service. Chandra, column 6, lines 20-34

23. In regard to claim 5, Elnozahy in view of Chandra disclosed:

receiving a request for a networked service at a local service manager; and Chandra, column 6, lines 20-34

determining whether the local service manager has information for referencing a networked service with characteristics that match parameters in the request for a networked service. Chandra, column 6, lines 20-34 - respond to query of directory in Elnozahy/Chandra combination

24. In regard to claim 6, Elnozahy in view of Chandra disclosed:

responsive to a determination that the local service manager has information about a matching networked service, returning information for referencing the matching networked service to the requesting client; Chandra, column 6, lines 20-34

responsive to a determination that the local service manager does not have information about a matching networked service, forwarding the request for a networked service from the local service manager to a distributed service manager associated with the local service manager. Chandra, column 6, lines 35-61

25. In regard to claim 7, Elnozahy in view of Chandra disclosed:

responsive to a determination that the distributed service manager does not have information for referencing one or more matching networked services, broadcasting the request for a networked service from the distributed service manager to all distributed service managers in the distributed data processing system; Chandra, column 6, lines 35-61

receiving information for referencing one or more matching networked services at the distributed service manager in response to the broadcast request; and Chandra, column 6, lines 35-61

caching the received information for referencing one or more matching networked services at the distributed service manager. Chandra, column 6, lines 35-61

26. In regard to claim 38, Elnozahy in view of Chandra disclosed:

determining whether the distributed service manager has information about a plurality of networked services with characteristics that match parameters in the request

for a networked service and forming a set of matched network services; Chandra, column 6, lines 10-19

determining, based on the request, whether to return a single matched network service of the set of matched network services or the set of matched network services; Chandra, column 6, lines 20-34

responsive to a determination to return a single matched network service, returning information about the single matched networked service from the distributed service manager to the local service manager; and Chandra, column 6, lines 20-34

responsive to a determination to return the set of matched network services, returning information about the set of matched network services from the distributed service manager to the local service manager. Chandra, column 6, lines 20-34

Chandra failed to explicitly disclose only allowing a single result to be returned as a result of a query. It would have been obvious to one of ordinary skill in the art at the time of invention that based on the results of the query, the user would receive the results that would have been returned from the query. If more than one service met the user's request, then the query would return all matching services. If only one service met the criteria, only one service would be returned.

27. In regard to claim 39, Elnozahy in view of Chandra disclosed *a plurality of types of networked services are available in the distributed data processing system, and wherein one of the characteristics of a matching service is a type of service.* Chandra, column 6, lines 20-34

28. In regard to claim 40, Elnozahy in view of Chandra disclosed *each of the distributed service managers caches information resulting from requests of supported clients, and wherein the information which respective service manager differs according to the requests of supported clients.* Chandra, column 6, lines 35-61 – caching of information based on queries

29. Claims 8-12 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Elnozahy in view of Chandra as applied to claim8 above, and further in view of Jindal et al. (US 6,324,580).

In regard to claims 8 and 9, Elnozahy in view of Chandra failed to disclose using load balancing to distribute the selection of a resource. However, Jindal disclosed the use of load balancing to select a preferred server to access a distributed network service. Jindal, column 4, lines 49-67. It would have been obvious to one of ordinary skill in the art at the time of invention to use load balancing in a distributed service network in order to reduce stress on a single server.

30. In regard to claim 10, Jindal further disclosed *comparing network-related metrics during the load balancing operation.* Jindal, column 6, lines 8-15

31. In regard to claim 11, Jindal further disclosed *comparing one or more of network-related metrics associated with an entire network path between a requesting client and a providing server.* Jindal, column 6, lines 8-15

32. In regard to claim 12, Jindal further disclosed *the network-related metrics are realtime network-related metrics and are selected from a group comprising: bottleneck-link speed, round-trip time, and hop count.* Jindal, column 6, lines 8-15

33. In regard to claim 41, Jindal further disclosed *each of the distributed service managers includes a localization module, wherein the parameters within respective localization modules are tailored to provide different load balancing for corresponding distributed service managers.* Jindal, column 4, lines 49-67 - selecting a preferred server

34. Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Elnozahy in view of Chandra as applied to claim 3 above, and further in view of Fowlow et al. (US 5,920,868).

35. In regard to claim 37, Elnozahy disclosed *a method of balancing demand for networked services in a distributed data processing system, the method comprising the steps of:*

initializing one or more local service managers within the distributed data processing system, wherein each local service manager has information about and provides access to networked services defined within a respective local region of the distributed data processing system for clients within the distributed data processing system, and wherein each client is uniquely associated with a local service manager; Cell Directory Service, Elnozahy, column 1, lines 41-59; initializes and runs in column 5, lines 20-37

initializing one or more distributed service managers within the distributed data processing system, wherein each distributed service manager provides access to networked services to local service managers within the distributed data processing system, and wherein each local service manager is uniquely associated with a distributed service manager; CDS server, column 5, lines 20-37

Elnozahy disclosed a lookup system for distributed directory service information in an network. Elnozahy failed to disclose the ability of said lookup system to cache information.

Chandra disclosed a method of distributed application caching. If the item queried if found, the result is returned to the user and cached locally. Chandra, column 6, lines 20-34. If the information is not found locally, the query will be executed on distributed directories until the information is found. Chandra, column 6, lines 35-61.

It would have been obvious to one of ordinary skill in the art at the time of invention to implement distributed caching with the Elnozahy distributed service directory system in order to reduce latency in responding to queries.

36. Elnozahy in view of Chandra failed to disclose the use of object request broker services in accessing services in a distributed system. However, Fowlow disclosed accessing objects in a distributed system using an ORB service. Fowlow, column 10, lines 38-58. It would have been obvious to one of ordinary skill in the art at the time of invention to use ORB services with a distributed network to allow remote users to easily access specific services based on their access abilities.

Conclusion

37. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

38. Sridhar et al. US 6,098,108

39. Byrne et al. US 6,347,312

40. Byrne et al. US 6,408,306

41. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey R. Swearingen whose telephone number is (571)272-3921. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivek Srivastava can be reached on 571-272-7304. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jeffrey R. Swearingen
Examiner
Art Unit 2445

/J. R. S./
Examiner, Art Unit 2445
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Supervisory Patent Examiner, Art Unit 2400